©IDOSR PUBLICATIONS International Digital Organization for Scientific Research

IDOSR JOURNAL OF APPLIED SCIENCES 11(1):1-5, 2026 ISSN: 2550-7931

https://doi.org/10.59298/IDOSRJAS/2026/11115 IDOSRJAS11106

Chronic Pain Management in War Survivors

Mugo Moses H.

School of Natural and Applied Sciences Kampala International University Uganda

ABSTRACT

Chronic pain is a prevalent and disabling consequence of war-related injuries, significantly impacting the physical, psychological, and social well-being of survivors. War injuries ranging from blast and shrapnel wounds to burns and crush injuries trigger complex pain mechanisms, including nociceptive, neuropathic, and centralized pain, often exacerbated by comorbid mental health disorders such as post-traumatic stress disorder. This narrative review synthesizes evidence on the epidemiology, underlying mechanisms, assessment approaches, and management strategies for chronic pain in war survivors. Effective management requires multidisciplinary approaches encompassing pharmacological and non-pharmacological interventions, trauma-informed rehabilitation, and consideration of psychosocial determinants. Special attention is needed for vulnerable populations, including children, women, the elderly, displaced persons, and individuals with disabilities. Policy, health system infrastructure, and accessibility considerations further influence the successful delivery of care. Despite advances, research gaps remain in prevalence estimation, standardized assessment, treatment implementation, and integration of chronic pain management into post-conflict health systems. Strengthening evidence-based interventions is critical to improving recovery, functional outcomes, and quality of life for war-affected populations.

Keywords: Chronic pain, war injuries, rehabilitation, multidisciplinary care, and post-traumatic stress.

INTRODUCTION

Several acute and chronic health problems accompany conflict and its aftermath. Injuries sustained during warfare can lead to long-term health consequences. Pain is a major obstacle to recovery, due to its importance in facilitating activities of daily living and returning to social and work activities [3]. War-related injuries result in four distinct injury patterns: penetrating or fragmenting wounds caused by indirect fire, such as shrapnel from shells or projectiles; blunt-force or crush injuries with contusions or fractures sustained through industrial accidents, targeted fire, or grenade blast; chemical, thermal, or electrical burns; and blast injuries due to overpressure (survivable but damaging)[2]. Mechanisms include nociceptive and neuropathic pain, sensitized nerve pathways in the spinal cord, central nervous system neuroplasticity, and comorbid mental health disorders. The psychological dimension of pain was previously overlooked [1].

Epidemiology and Burden of Chronic Pain in War Survivors

War is a unique contributor to injury-related chronic pain. Combat injuries such as those from blast, shrapnel, and burns are distinctive in their underlying physical mechanisms, yet they have similarities compared to non-battle injuries leading to chronic pain [5]. Consequently, the epidemiology and burden of chronic pain in war survivors can differ from those of non-war populations. Knowledge of these factors has implications for the management of chronic pain in war survivors [4]. Chronic pain among war survivors is widespread. The prevalence of chronic pain in military veterans varies widely, with a range of estimates from 25% to 72%. Moderate to severe pain lasting at least three months is reported in about 27% of veterans. Among United States veterans of Operation Enduring Freedom/Operation Iraqi Freedom, chronic pain prevalence rates are reported between 43% and 48% [8]. The incidence of chronic pain in veterans following the veteran's last war-related injury has been reported to occur in up to 3.4% of veterans per year. In comparison, a study on chronic pain among Canadian veterans found a prevalence rate of around 51%. War injury patterns among Canadian veterans are similar to Operation Enduring

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Freedom/Operation Iraqi Freedom injury patterns [5]. The burden of chronic pain is substantial in veterans. Chronic pain is associated with marked disability and is the most important predictor of mental well-being and health-related quality of life [6]. Furthermore, chronic pain leads to a range of adverse economic impacts, such as reduced productivity, increased healthcare costs, and early retirement from the workforce. Studies estimate the annual economic burden of chronic pain on the United States and veteran populations to be on the order of $635 and $103 billion, respectively [2].

Mechanisms Underlying Pain in War-Related Injury

Chronic pain quite frequently affects war survivors, compromising their quality of life, limiting activities, and promoting disability [3]. Individuals with chronic pain after war-related injury commonly experience avoidance symptoms, feelings of anger and guilt, hyperarousal, low mood, and nightmares [7]. Those with a chronic pain history exhibit higher levels of post-traumatic stress disorder (PTSD) symptoms compared to people affected by war who have no chronic-pain experience [3]. Chronic pain generally occurs following an acute phase of healing. Different types of pain mechanisms, nociceptive, neuropathic, and central, are conceptualized across three stages: transduction, transmission, and perception [5]. For war injuries, chronic pain is particularly associated with blast and shrapnel injuries as well as burns. In both short- and long-term follow-ups, patients with these specific types of injuries reported a higher prevalence of chronic pain than others. Nociceptive pain is induced by tissue injury and usually decreases as the damaged tissue heals. Inflammatory mediators increase the excitability of nociceptors involved in this type of pain [7]. Neuropathic pain results from damage to the peripheral or central nervous system. Plastic changes in the neural system can further sustain chronic pain from an injury that has already healed. A combination of the three mechanisms can also contribute to chronic pain after war-related injury. All three mechanisms can arise from a single injury, find a common substrate at later recovery stages, and be maintained on overlapping time scales [8]. Following trauma and surgery, extensive nerve damage is common, triggering neuropathic pain and neuroplastic changes. Multi-site injuries broaden the spectrum of possible mechanisms. Chronic pain and PTSD share common pathways, including neuroplastic changes, hyperarousal, and generalization of aversive stimuli [9].

Assessment and Evaluation

Chronic and debilitating pain is experienced by many veterans of war, and the review of such cases and their evaluation has certain parameters unique to it [3]. Based on this aspect, initial assessment of war-related chronic pain should be conducted through the completion of a brief screening scheme inquiring into medical, psychological, and social dimensions of the patient's health and having direct references to the potential effects of war experience [4]. The screening must be supplemented with a comprehensive assessment of the pain associated with the injury; officially recognized diagnostic criteria (e.g., DSM-5) must be used to verify the disruptive effects of the war experience on functioning and adjust the Therapeutic Approach within the Multidisciplinary Model accordingly [5]. Particular evaluation of the pain experienced after the occurrence of injury includes identification of whether such an incident has taken place, the manner of injury, and, consequently, the nature of pain. Objective evaluation of chronic pain ought to include self-report measures specifying intensity of pain and interference [5]; the Verbal Numerical Rating Scale, Rating Pain Intensity/VNRS-PI (0–10 scale) (0=none, 10=worse possible, 0–2=acceptable) can be employed; the Brief Pain Inventory, Short Form/BPI-SF specifies the interference with daily activities caused by pain, while an optional emphasis is placed on the chronicity of pain (longer than 6 months)[8]. Recommendations stipulate that every such tool be applied such that it identifies other systematic levels of care (Multidisciplinary Team, Counselling Team), helps set Personal Goals of the Therapeutic Pathway with respect to pain, and concludes recommendations regarding the estimation of chronicity of pain needed for other levels of Intervention [9].

Non-Pharmacological Interventions

Chronic pain is one of the most common health complaints reported by war survivors, and it has a significant negative impact on the health and well-being of individuals who have experienced war injuries [6]. Non-pharmacologic treatments, including physical therapy, occupational therapy, graded exercise therapy, desensitization, cognitive-behavioral therapy, mindfulness meditation, sleep hygiene, and other complementary techniques such as aromatherapy, massage, and acupuncture, can reduce pain and disability associated with musculoskeletal injuries, burns, and other war-related injuries[8]. Because the war-related trauma experienced by survivors varies widely, effective management requires tailoring treatments to specific injuries and their associated physical and psychological sequelae [6].

Pharmacological Treatments and Safety Considerations

As outlined in the previous sections, chronic pain represents a significant health issue for survivors of war-related injuries [6]. Pharmacotherapy remains an essential element of treatment when physical therapy alone is inadequate. Several classes of analgesics have been used in this population, including non-opioid analgesics, opioids, and local anesthetics. A number of cautions regarding these analgesic classes are also indicated [8]. A

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

broad range of surgical and non-surgical physical therapy techniques can assist in the management of chronic pain in war survivors [8]. Similarly, additional therapeutic modalities can be utilized alongside pharmacological treatment. Medications such as antidepressants and muscle relaxants can potentiate the action of analgesics, offer additional pain relief, and improve associated symptoms. However, caution is prudent during the withdrawal of some medications, as this process can exacerbate pain and functional impairment [1]. Monitoring and safety frameworks can assist with ensuring safe prescription, especially of benzodiazepines, amphetamines, and opioids. Risk stratification, action planning, and regular review can aid in the safe selection and evaluation of medications [7].

Multidisciplinary Care Models and Rehabilitation

Survivors of war-related injuries frequently suffer from persistent, disabling pain [2]. Nociceptive, neuropathic, and centralized mechanisms can all contribute to post-injury pain, which is reported not only after traumatic injuries but also following fracture or soft tissue injuries without direct nervous system damage [4]. Persons who have endured war injuries present unique challenges and need safe, effective, trauma-informed pain management. A multifaceted biopsychosocial strategy recognizing the impact of psychological, social, and contextual factors may improve care [3]. Concurrently addressing psychosocial determinants can facilitate community reintegration, a critical goal for many war survivors. Survivors of torture and war experience complex, multilayered health needs that vary according to their individual circumstances [5]. Access to appropriate health services is often severely disrupted, and resources are limited during wartime. Following conflict, landmines and unspent ordnance continue to injure civilians [1].

Psychological and Social Dimensions

War-related injuries incur extensive physical, psychological, and social repercussions long after an armed conflict ends. Survivors of blasts, shrapnel, burns, and torture often suffer chronic pain coupled with post-traumatic stress symptoms, mood disorders, and social difficulties [3]. These other dimensions need to be recognized and addressed alongside pain management [1]. Many health sector actors operating in humanitarian and post-conflict contexts directly encounter patients with modulating pain and these comorbid difficulties. Such conditions may be prevalent in the wider community as well [3]. Emphasizing these additional dimensions serves to integrate pain management in line with the broader biopsychosocial model of war-related suffering [8]. Pain management remains a critically important yet often neglected priority.

Special Populations and Considerations

Survivors of war-related trauma represent an especially vulnerable population due to the multifaceted challenges they face. Among them, children and adolescents stand out as a priority group [6]. Persistent pain and psychological problems, including posttraumatic stress disorder (PTSD), affect both groups to varying degrees, necessitating adaptations to assessment and management approaches [2]. Additional considerations arise for elderly individuals, women, displaced persons, prisoners, people with disabilities, and other groups who may have specific or heightened needs, as well as for patients undergoing treatment who are pregnant or postpartum. War-related injuries also affect populations' service accessibility or quality [8]. Socioeconomic status, education, and language may limit access to needed services. Immunization rates, prenatal care, and contraceptive use may be severely impeded by injury type [3]. Pre- and postcolonial cultural and religious beliefs concerning pain or disability may influence expectations regarding care and rehabilitation [7]. Cultural or religious beliefs regarding gender interaction have implications for the design and delivery of services to women. Limited communication, whether due to education or language, can lead to service underutilization [5]. In central Haiti, greater access to chat functions on social media services has created high demand for care information shared through multimedia; further dissemination may help individuals gain a greater understanding of needed care [8]. Access to transportation may limit not only initial care but also follow-up services and recurrent medication supply. Services incorporated into preexisting community or facility infrastructure may therefore enhance safe resumed activity [9]. The requirements of transport-intensive services, such as school referral, occupational therapy, physical therapy, and counselling, may hinder access for specific war-related injuries. Community-based services, including those delivered at the home site, or those, such as advice on supplementary minor structures, that require little transport, may enhance treatment effectiveness and accessibility [3]. Such adaptability is necessary not only for injury types prompting such obstacles, but also for the added infrastructure these special populations present.

Policy, Accessibility, and Health System Implications

Prolonged conflict inflicts injury and damage to human capital and infrastructure. Yet the suffering continues long after the guns stop firing, when the efforts to rebuild society begin [7]. Efforts to build peace often hinge on reconciliation among warring parties, while other forms of reconstruction are overlooked [9]. According to World Bank estimates, the welfare and well-being losses following violent conflict can exceed the direct cost of destruction by at least an order of magnitude and often much more[6]. Development assistance by the international community is typically tied to some form of peace treaty or negotiations, notwithstanding the loss of

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

social capital and the need for restoration. A study of the universe of contested civil conflicts worldwide since the 1940s found that in the post-conflict phase, joint reconstructions of rehabilitation that simultaneously address these three forms of capital lead to a lower probability of return to violent conflict [10]. This distinction matters because civil wars have returned more often to prior survivors than elsewhere.

Future Directions and Research Gaps

Chronic pain management among war survivors remains an under-evaluated topic with significant research gaps. Enhancing the evidence base for this vulnerable population could guide interventions applicable in low-resource environments and contribute to combating the broader global burden of war-related injuries [10]. Progress in these areas, therefore, holds the promise of substantial societal benefit. Scholarly interest in war-related chronic pain has focused mainly on rehabilitation, transition from acute to chronic condition, and specific topics like regional analgesia and post-traumatic stress [3]. Yet, core questions remain unaddressed, including prevalence, incidence, disability-adjusted life years, and the relationship between chronic pain and mental health consequences. Developing standardized patient-derived datasets for these variables should be a priority. A lack of systematic collections has hindered a rigorous epidemiological description of chronic pain among war survivors [9-12]. Existence at all would facilitate targeted transmission to health planners determining the burden of chronic pain, developing bilateral agreements for addiction prevention, and charting the magnitude of disaster-related pain globally [10, 13, 14]. A second need lies in implementing chronic pain management among war survivors. Gaps remain in formalized implementation, outreach, models of care, and comprehensive descriptions of existing schemes and their outcomes, information crucial for technical cooperation [7]. Integration with wider frameworks addressing frontline personnel and returning peacekeepers from the United Nations, North Atlantic Treaty Organization, and other security arrangements could amplify the societal ripple effect. These considerations span policy areas and warrant greater attention to translate knowledge into action [3, 15].

CONCLUSION

Chronic pain in war survivors is a multifaceted health challenge with enduring consequences for individuals and societies. Evidence highlights the interplay of complex injury patterns, neurophysiological mechanisms, and psychosocial factors in the persistence of pain. Effective management requires a multidisciplinary, biopsychosocial approach, integrating pharmacological therapies, non-pharmacological interventions, rehabilitation, and psychosocial support. Special populations necessitate tailored strategies that account for age, gender, cultural norms, and accessibility barriers. Health system strengthening, policy development, and the integration of chronic pain management into post-conflict reconstruction are critical to mitigating long-term disability and promoting social and occupational reintegration. Future research should prioritize epidemiological studies, standardized outcome measures, and implementation science to translate knowledge into practical, context-sensitive interventions that improve the quality of life of war survivors globally.

REFERENCES

1. Amris S. Chronic pain in survivors of torture–psyche or soma?. Psyke & Logos. 2004 Jun 1;25(1):30.
2. Belitskaya-Levy I, Clark JD, Shih MC, Bair MJ. Treatment preferences for chronic low back pain: views of veterans and their providers. Journal of Pain Research. 2021 Jan 27:161-71.
3. Ugwu CN, Ugwu OP, Alum EU, Eze VH, Basajja M, Ugwu JN, Ogenyi FC, Ejemot-Nwadiaro RI, Okon MB, Egba SI, Uti DE. Sustainable development goals (SDGs) and resilient healthcare systems: Addressing medicine and public health challenges in conflict zones. Medicine. 2025 Feb 14;104(7):e41535.
4. Gallagher RM, Polomano RC, Giordano NA, Farrar JT, Guo W, Taylor L, Oslin D, Goff BJ, Buckenmaier CC. Prospective cohort study examining the use of regional anesthesia for early pain management after combat-related extremity injury. Regional Anesthesia & Pain Medicine. 2019 Dec 1;44(12):1045-52.
5. Millegan J, Denninger JW, Bui E, Jakubovic RJ, Ram V, Bhakta J, Hiller Lauby MD, Mehta DH, Sager JC, Fricchione G, Sylvia LG. A mind-body program for pain and stress management in active duty service members and veterans. Psychological services. 2021 May;18(2):186.
6. Ugwu OP, Ogenyi FC, Ugwu CN, Basajja M, Okon MB. Mitochondrial stress bridge: Could muscle-derived extracellular vesicles be the missing link between sarcopenia, insulin resistance, and chemotherapy-induced cardiotoxicity?. Biomedicine & Pharmacotherapy. 2025 Dec 1;193:118814.
7. Haun JN, Fowler CA, Venkatachalam HH, Saenger MS, Alman AC, Smith BM, Schneider T, Benzinger R, Stroupe K, French DD. Empower Veterans Program (EVP): a chronic pain management program demonstrates positive outcomes among veterans. BMC Health Services Research. 2023 May 3;23(1):431.
8. Albesher M, AlKhalifah M, Hazazi A, Hakeem G, Almogbel B. Non-Pharmacological Interventions for Chronic Pain Management: A Narrative Review. The Journal of Medicine, Law & Public Health. 2025 Aug 23;5(4):757-64.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

9. Paul-Chima UO, Nneoma UC, Bulhan S. Metabolic immunobridge: Could adipose-derived extracellular vesicles be the missing link between obesity, autoimmunity, and drug-induced hepatotoxicity?. Medical Hypotheses. 2025 Sep 28:111776.
10. Oren T, Ercanli N, Maayan O, Tham S, Wright D, Kaur G. Treatments and interventions addressing chronic somatic pain in torture survivors: A systematic review. PLOS Global Public Health. 2024 Mar 28;4(3):e0003070.
11. Hanoski TD. Humphrey, Geraldine M. & Zimpfer, David G. Counselling For Grief and Bereavement. Canadian Journal of Counselling and Psychotherapy. 2000;34(1).
12. Paul-Chima UO, Nnaemeka UM, Nneoma UC. Could dysbiosis of urban air microbiota be an overlooked contributor to pediatric asthma and neurodevelopmental disorders?. Medical Hypotheses. 2025 Sep 12:111758.
13. Adams RS, Meerwijk EL, Larson MJ, Harris AH. Predictors of Veterans Health Administration utilization and pain persistence among soldiers treated for postdeployment chronic pain in the Military Health System. BMC Health Services Research. 2021 May 24;21(1):494.
14. Ugwu CN, Ugwu OP, Alum EU, Eze VH, Basajja M, Ugwu JN, Ogenyi FC, Ejemot-Nwadiaro RI, Okon MB, Egba SI, Uti DE. Medical preparedness for bioterrorism and chemical warfare: A public health integration review. Medicine. 2025 May 2;104(18):e42289.
15. Mannes ZL, Stohl M, Fink DS, Olfson M, Keyes KM, Martins SS, Gradus JL, Saxon AJ, Maynard C, Livne O, Gutkind S. Non-pharmacological treatment for chronic pain in US veterans treated within the veterans health administration: implications for expansion in US healthcare systems. Journal of general internal medicine. 2022 Nov;37(15):3937-46.

CITE AS: Mugo Moses H. (2026). Chronic Pain Management in War Survivors. IDOSR JOURNAL OF APPLIED SCIENCES 11(1):1-5. https://doi.org/10.59298/IDOSRJAS/2026/11115

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.